QUASER
we cut faster

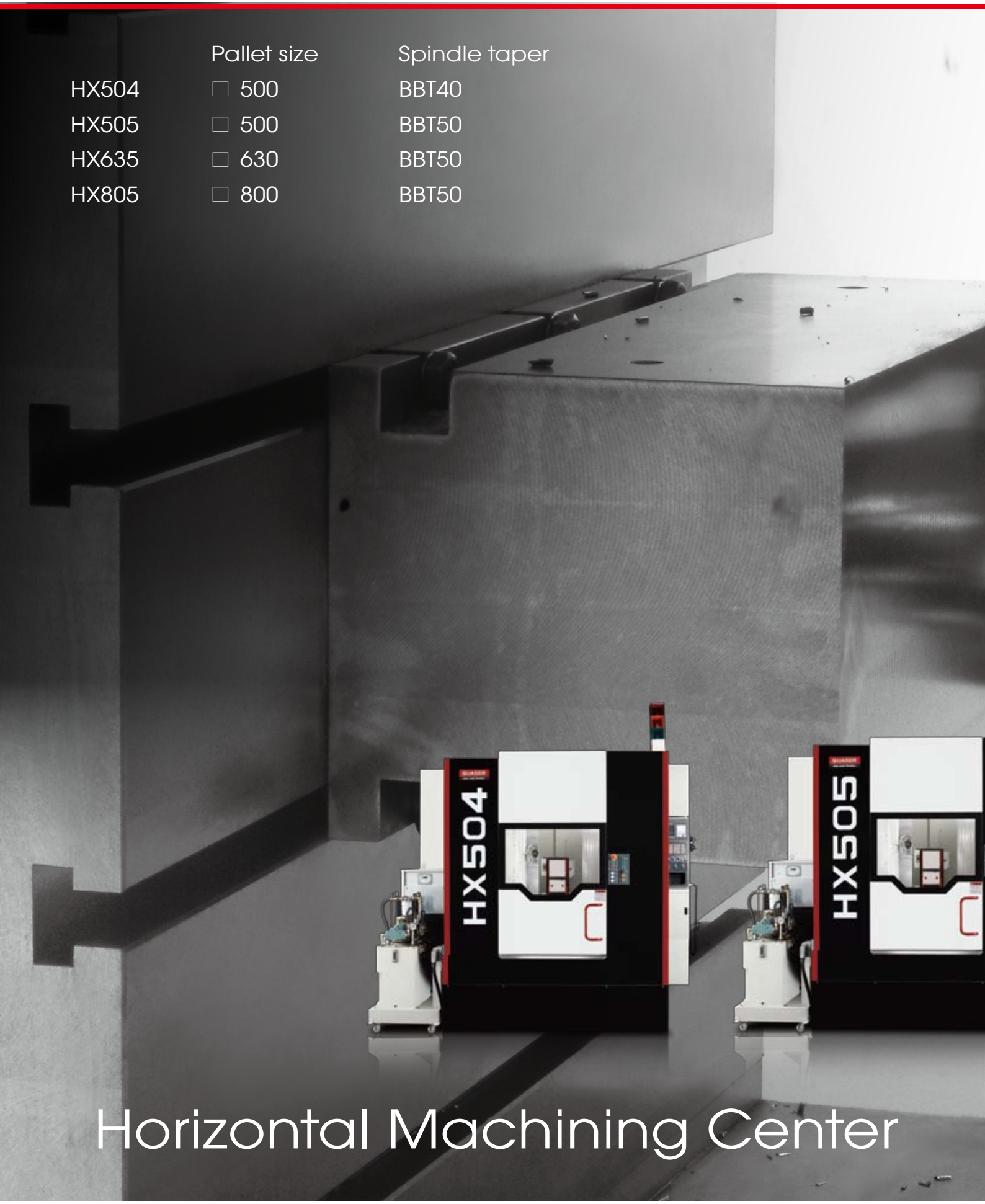
HX SERIES


QUASER

CONTENTS

HX SERIES

	Pallet size	Spindle taper
HX504	□ 500	BBT40
HX505	□ 500	BBT50
HX635	□ 630	BBT50
HX805	□ 800	BBT50



Horizontal Machining Center


HX635
QUASER
HX805

HX504 & HX505

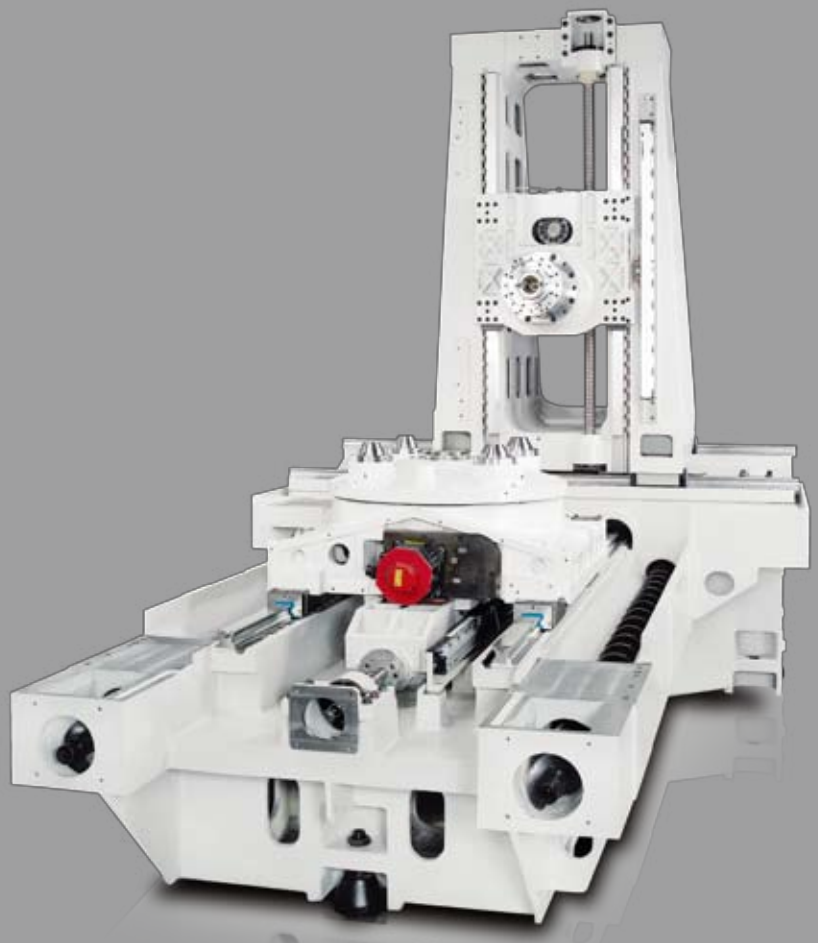
HX504 Max. workpiece: Ø762 mm x 800 mm / 500 kg

HX505 Max. workpiece: Ø800 mm x 800 mm / 500 kg

HX635 & HX805

HX635 Max. workpiece: Ø950 mm x 950 mm / 900 kg

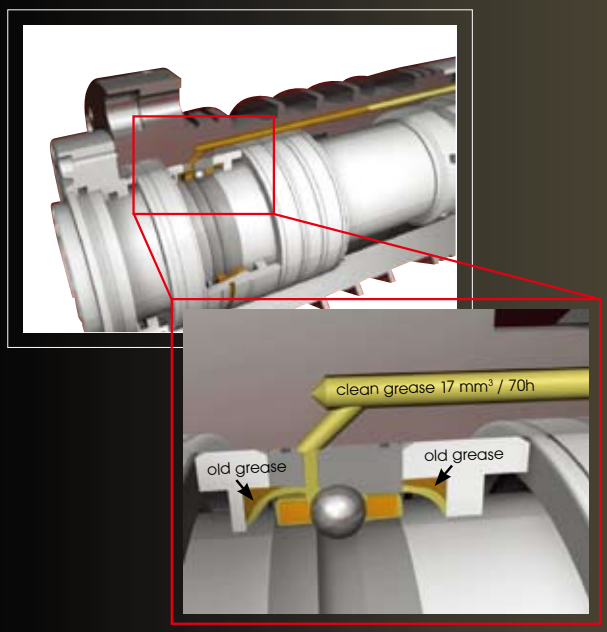
HX805 Max. workpiece: Ø1,200 mm x 1,100 mm / 1,500 kg



Unique spindle technology

Re-grease system

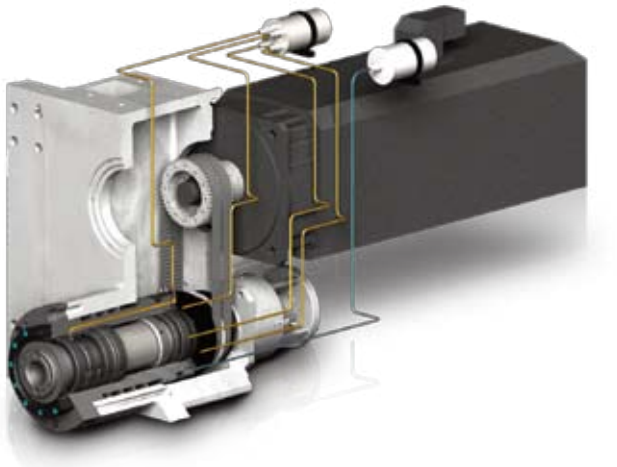
- Use car industry re-greasing principle to supply "clean grease" at 70 hr interval by 17 mm^3 / shoot.



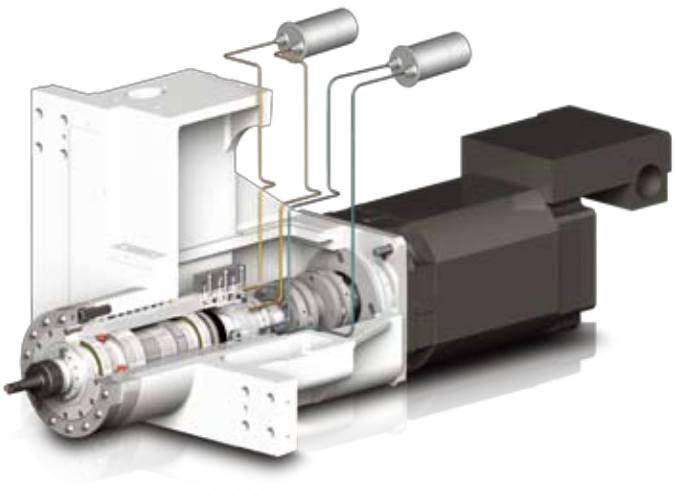
- The grease chamber volume at 7.5 cm^3 can support 28,840 hr.
- This LUBCON unit service life at 3 years as minimum is guaranteed.

HX504 40 Taper

- Belt spindle
  - Speed range : 9,000 / 12,000 min^{-1}
  - Transmission : Belt driving
  - Lubrication : Re-grease system

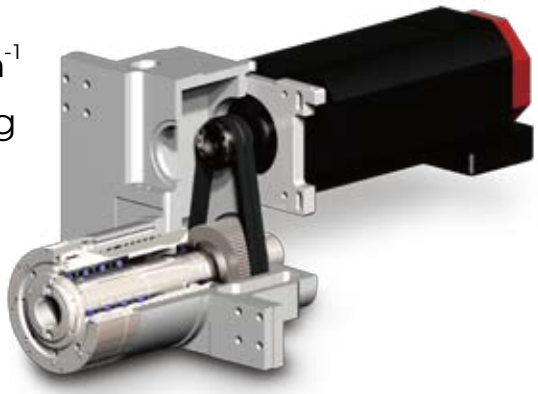


- Coupling spindle
  - Speed range : 15,000 min^{-1}
  - Transmission : Coupling
  - Lubrication : Re-grease system



HX505 50 Taper

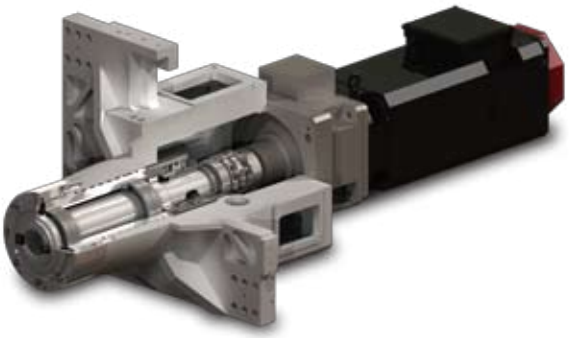
- Belt spindle
  - Speed range : 6,000 min^{-1}
  - Transmission : Belt driving
  - Lubrication : Re-grease system



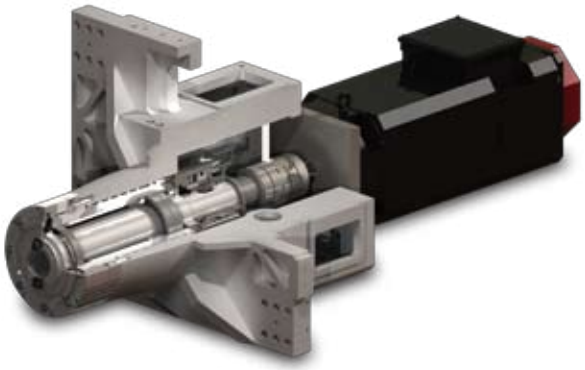
Standard on all models

HX635 50 Taper

- Coupling spindle
  - Speed range : 6,000 min^{-1}
  - Transmission : Gear box + Coupling
  - Lubrication : Grease packed system

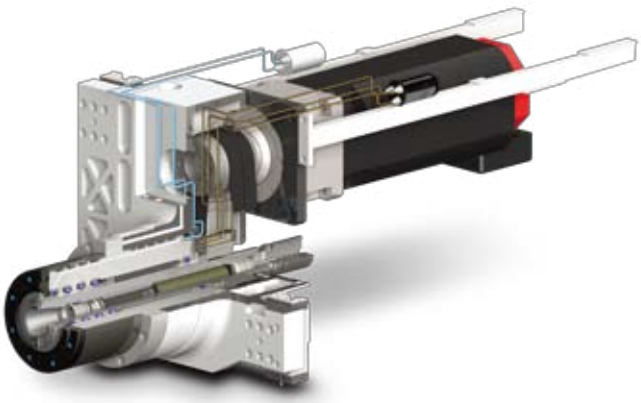


- Speed range : 10,000 min^{-1}
- Transmission : Coupling
- Lubrication : Grease packed system

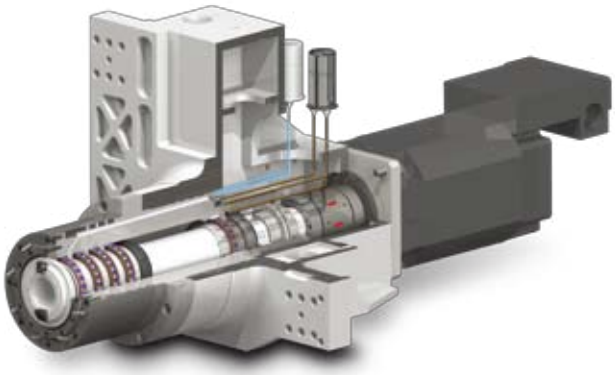


HX805 50 Taper

- Belt spindle
  - Speed range : 6,000 / 7,500 min^{-1}
  - Transmission : Gear box + Belt
  - Lubrication : Re-grease system



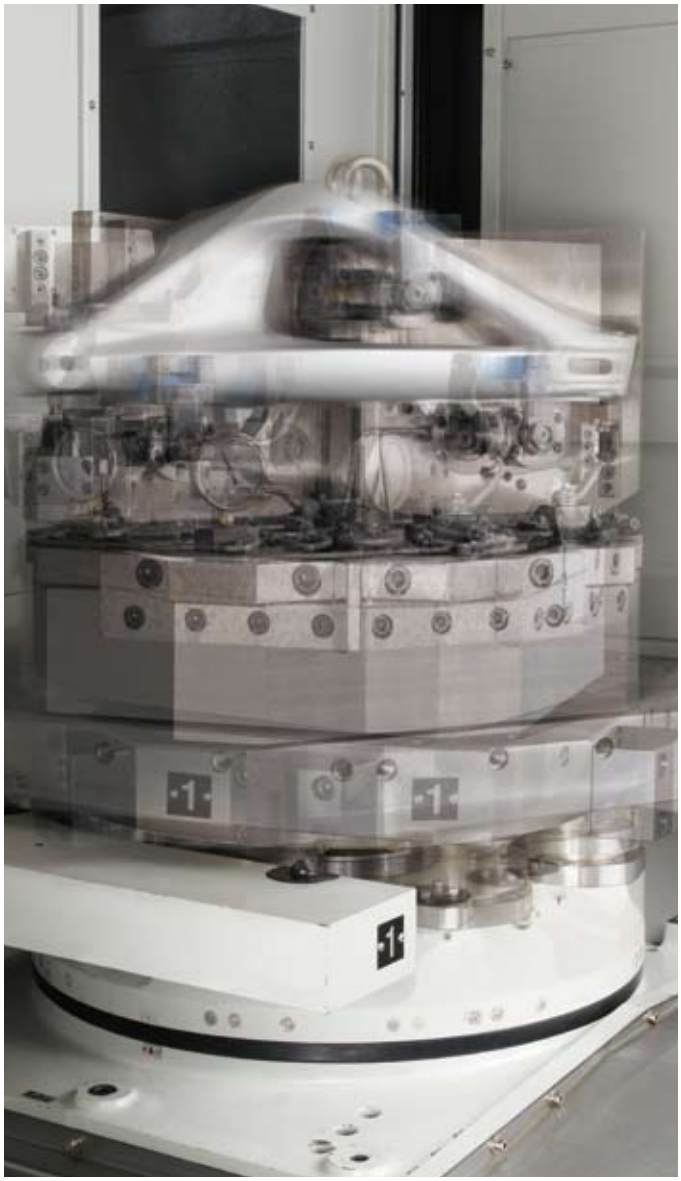
- Coupling spindle
  - Speed range : 10,000 min^{-1}
  - Transmission : Coupling
  - Lubrication : Re-grease system



Direct axes transmission

(F) FANUC (T) HEIDENHAIN

			HX504		HX505		HX635		HX805	
			A / B		A		A / B		A / B	
			E	P	E	P	HT	HS	HT	HS
Motor X / Y / Z	(KW)	(F)	3 / 4 / 3	4 / 4 / 4	4 / 4 / 4	4 / 4 / 4	7 / 6 / 7		7 / 6 / 7	
		(T)	-	6 / 6 / 6	-	6 / 6 / 6	- ; 9.6 / 9.6 / 9.6		-	
B	(KW)	1°	3 (F) 3.5 (T)		3 (F) 3.5 (T)		3		3	
		0.001°	4 (F) 5.7 (T)		-		4		4	
Rapid X / Y / Z (m/min)			32	48	32		40		40	
Acceleration X / Y / Z (m/s^2)			3 / 4 / 4	4 / 5 / 5	3 / 4 / 4		4 / 5 / 5		4 / 5 / 5	

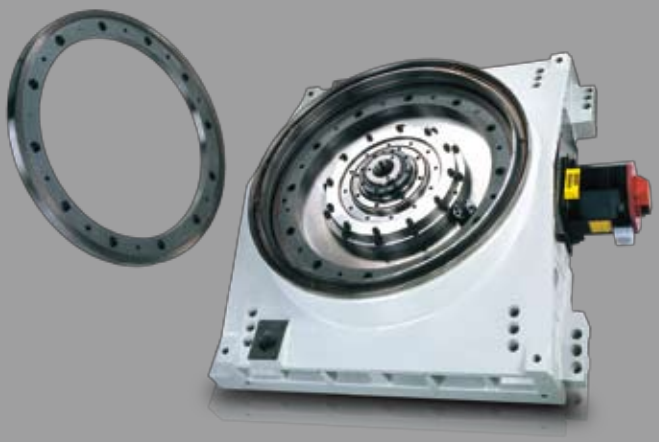



B
B

4th axes

HX504 / HX505 four cones clamping system, clamping force at 45,000 N.
HX635 / HX805 4 large size taper cones provide 91,000 N clamping force.

1° indexing table Hirth coupling



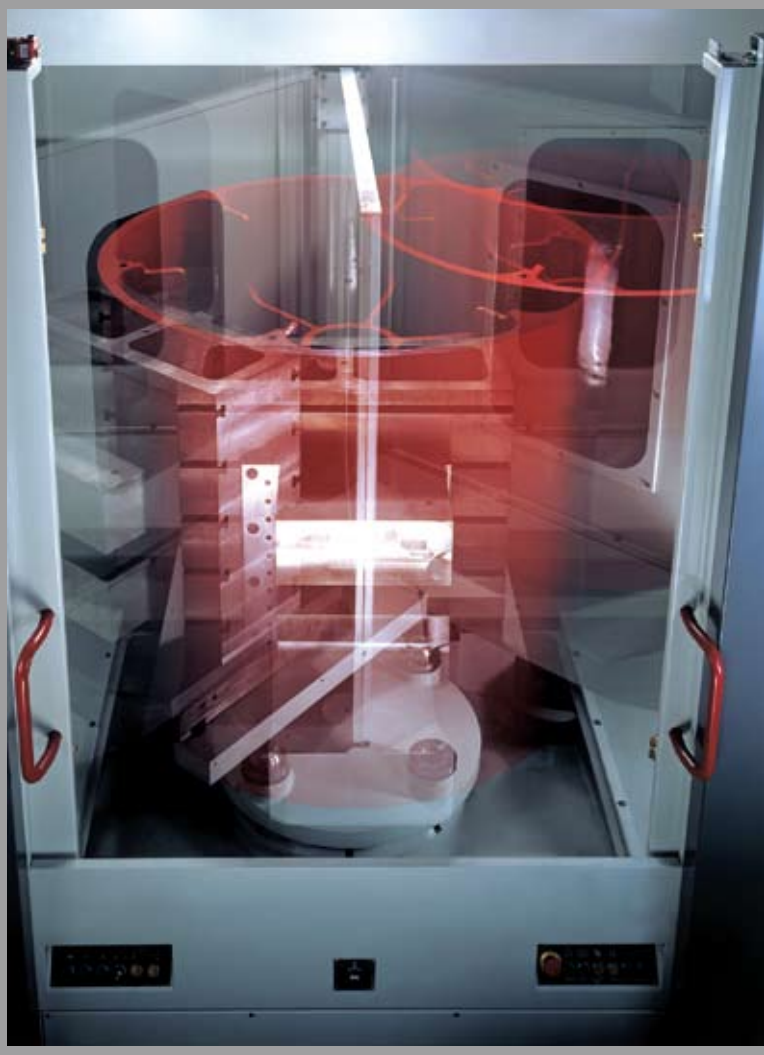
	HX504 / HX505	HX635	HX805
Pallet size	500 x 500 mm	630 x 630 mm	800 x 800 mm
Accuracy	±3 sec	±3 sec	±3 sec
Repeatability	±1.5 sec	±1.5 sec	±1.5 sec
Large tooth coupling	Ø360	Ø520	Ø700
Tilting moment	7,800 Nm	15,000 Nm	28,000 Nm
High clamping force	40,000 N	90,000 N	90,000 N

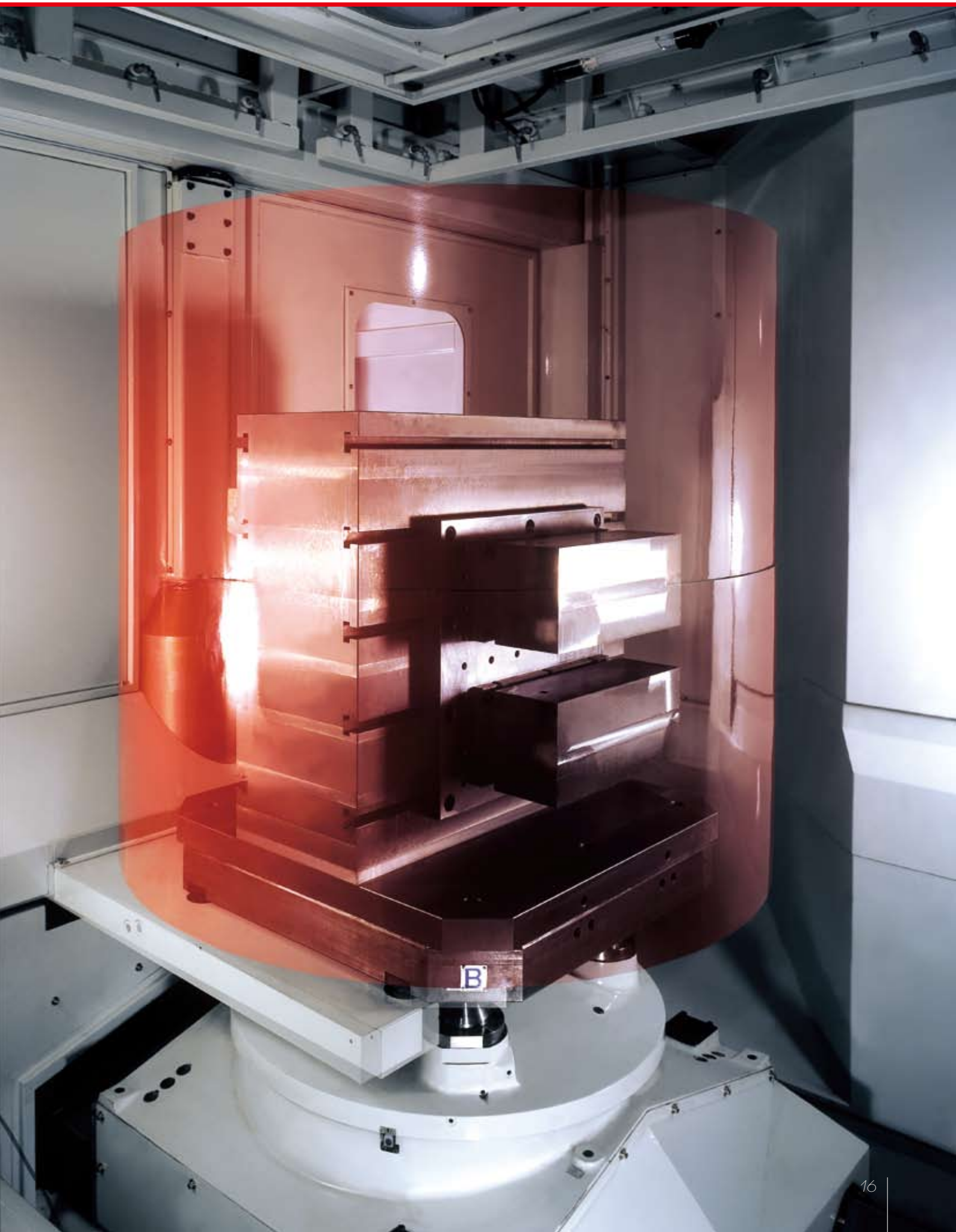
0.001° NC rotary table

	HX504	HX635	HX805
Pallet size	500 x 500 mm	630 x 630 mm	800 x 800 mm
Indexing accuracy	±5 sec	±5 sec	±5 sec
Repeatability	±2 sec	±2 sec	±2 sec
Tilting moment	4,000 Nm	9,000 Nm	19,000 Nm
High clamping force	3,200 Nm	5,400 Nm	5,635 Nm
Drive torque	2,550 Nm	2,550 Nm	3,200 Nm

Pallet system

	HX504	HX505	HX635	HX805
APC time (sec.) at 60Hz	10.5		14	19
Pallet load capacity (kgs / each)	500		900	1500
Pallet changing repeatability (mm)	0.01			




B

ATC system

(D) Disk type (C) Chain type (R) Rack type

	HX504		HX505			HX635			HX805	
	A / B		A			A / B			A / B	
ATC type	**BT40**		**BT50**			**BT50**			**BT50**	
No. of tools	60 (D)	120/240 (R)	40 (D)	60 (C)	150 (R)	40 (D)	60 (C)	150 (R)	60 (C)	150 (R)
Max. tool length (mm)	450		400			500			600	
Max. tool weight (kg)	10		15	20		15	20		20	

60(D)

40(D)

60(C)

240(R)

150(R)

By std. magazine combination	HX504		HX505		HX635		HX805	
	A / B		A		A / B		A / B	
	E	P	E	P	HT	HS	HT	HS
Tool to tool time (sec.)	2		2.6		3.5		3.5	
Chip to chip time (sec.)	4.8	4.5	5.4		6.5		7	

Coolant & chip management

Total solution on coolant & chip management:

1. Coolant through spindle
2. Nozzle coolant
3. Wash gun
4. Ceiling wash down
5. Apron type X way cover
6. Dual augers
7. Chip conveyor
8. Large capacity coolant tank

	HX504	HX505	HX635	HX805
Coolant tank	450 L	450 L	900 L	1,200 L
Coolant through spindle	20 bar	20 bar	20 bar	20 bar
Nozzle coolant	3 bar	3 bar	4 bar	4 bar
Ceiling wash down	1.5 bar	1.5 bar	1.5 bar	1.5 bar
Wash gun	3 bar	3 bar	4 bar	4 bar
Internal chip conveyor	-	-	-	Std.
External chip conveyor	Std.	Std.	Std.	Std.
Drum filter	Opt.	Opt.	Opt.	Opt.

5

HX505

HX805

6

7

8

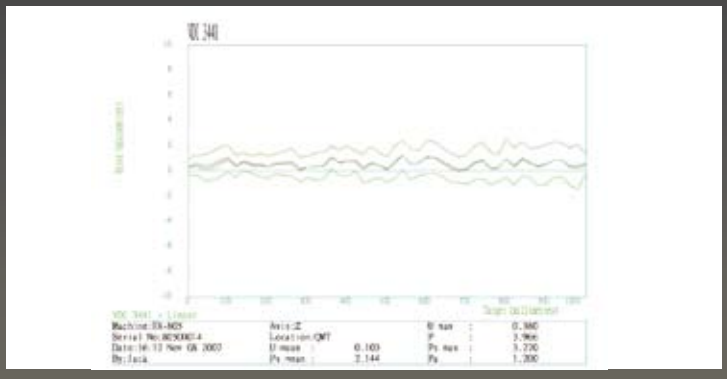
8

Easy operation

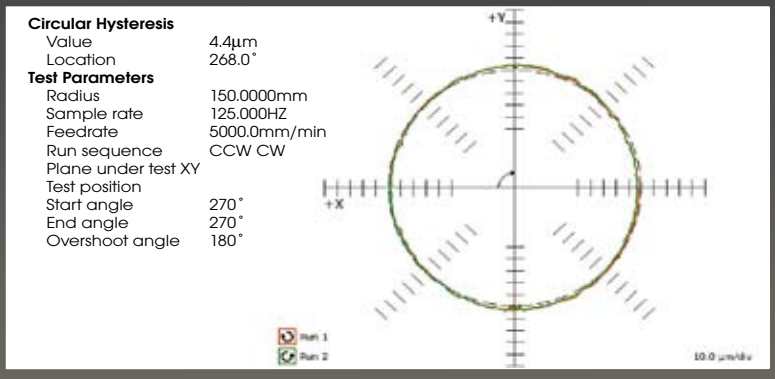
		HX504	HX505	HX635	HX805
A	Operator side door open	703 mm	703 mm	800 mm	760 mm
B	Side door to spindle at convenient for manual tool loading / unloading from spindle	285 mm	285 mm	220 mm	268 mm
C	From center of table to operator door	645 mm	645 mm	715 mm	868 mm
D	Tool loading / unloading on magazine side				
E	Swivel type operation panel				
F	Documentation & hand tool shelf				

Accuracy

Positioning accuracy = 1.200 µm VDI 3441



Double ball bar,
Feedrate: 5,000 mm/min, Value: 4.4µm (ISO)

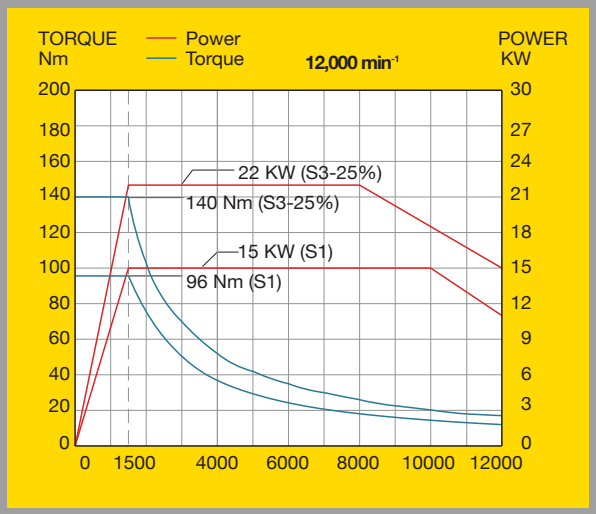


Note: The measuring results indicated in this catalog are provided as an example by random selection.

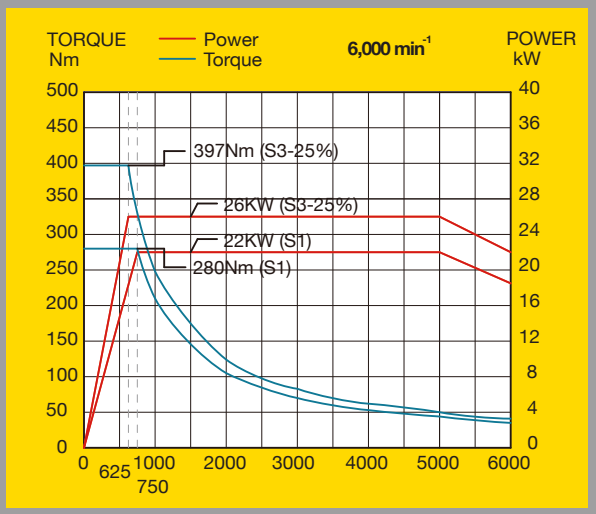
Cutting Data (HX504 / HX505)

	HX504		HX505
Workpiece material	**ST60**	**ALMGSI1**	**ST60**
Tool used	80 mm dia. Face mill	80 mm dia. Face mill	125 mm dia. Face mill
Spindle speed	1,000 min^{-1}	7,000 min^{-1}	630 min^{-1}
Feedrate	1,800 mm / min	10,000 mm / min	1,500 mm / min
Metal removal rate	320 cm^3/ min	3,000 cm^3/ min	600 cm^3/ min
Tool used	40 mm dia. End mill	40 mm dia. End mill	40 mm dia. End mill
Spindle speed	240 min^{-1}	640 min^{-1}	240 min^{-1}
Feedrate	101 mm / min	500 mm / min	132 mm / min
Depth / width of cut	50 / 25 mm	-	67.5 / 20 mm
Tool used	54 mm dia. Insert drill	54 mm dia. Insert drill	75 mm dia. Insert drill
Spindle speed	880 min^{-1}	2,000 min^{-1}	640 min^{-1}
Feedrate	180 mm / min	380 mm / min	90 mm / min
Metal removal rate	412 cm^3/ min	870 cm^3/ min	397cm^3 / min
Tool used	M36xP4.0 tap	M36xP4.0 tap	M42xP4.5 tap
Spindle speed	177 min^{-1}	186 min^{-1}	120 min^{-1}
Feedrate	708 mm / min	744 mm / min	540 mm / min

FANUC Motor type: α15 / 12,000*i* (HX504)



FANUC Motor type: α22/12,000*i* (HX505)



Cutting Data HX635

FACE MILLING

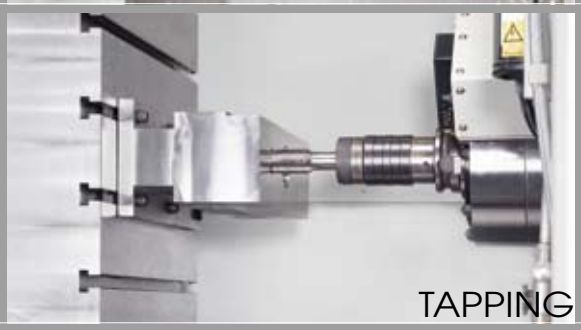
Workpiece material	Ductile cast iron (FCD450)
Tool used	125 mm dia. face mill
Tool length	210 mm
Spindle speed	630 min^{-1}
Feedrate	1,500 mm/min
Machining in upper range of the Y-axis	
Depth/width cut	4 / 100 mm
Spindle load	100%
Metal removal rate: 600 cm^3/min	

END MILLING

Workpiece material	Ductile cast iron (FCD450)
Tool used	40 mm dia. end mill
Spindle speed	1,200 min^{-1}
Feedrate	480 mm/min
Depth/width of cut	6 / 50 mm

DRILLING

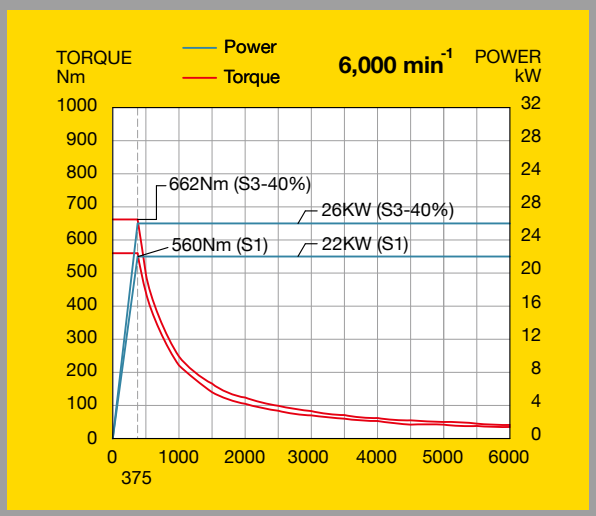
Workpiece material	Ductile cast iron (FCD450)
Tool used	75 mm dia. Insert drill
Spindle speed	702 min^{-1}
Feedrate	106 mm/min
Metal removal rate: 468 cm^3/min	



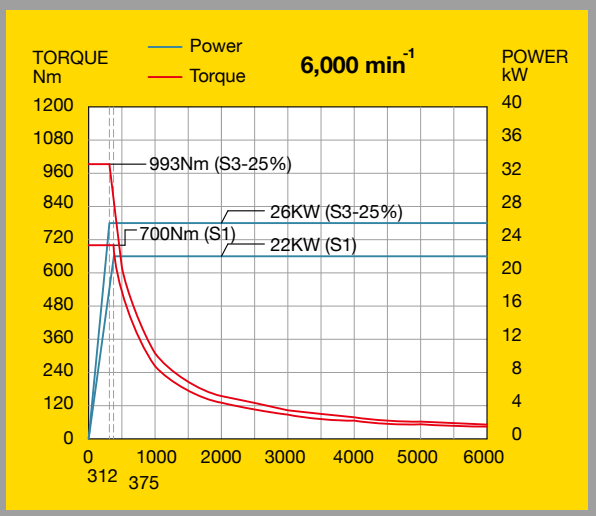
TAPPING

Workpiece material	Ductile cast iron (FCD450)
Tool used	M48xP5.0 tap
Spindle speed	30 min^{-1}
Feedrate	150 mm/min
Spindle load	59%

FANUC Motor type: α22 / 10,000iT (HX635)



FANUC Motor type: αil 22/7000 (HX805)



Cutting Data HX805

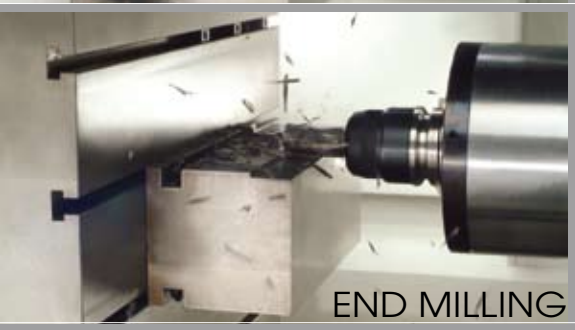
FACE MILLING

Workpiece material	Ductile cast iron (FCD450)	
Tool used	200 mm dia. face mill	
Spindle speed	320 min^{-1}	397* min^{-1}
Feedrate	1,280 mm/min	1,710* mm/min
Depth/width of cut	4 / 160 mm	4 / 160* mm
Metal removal rate	819 cm^3/min	1094* cm^3/min

Note: * FANUC spindle amplifier SPM-30i (opt.)

SIDE MILLING

Workpiece material	Ductile cast iron (FCD450)
Tool used	150 mm dia. staggered tooth side milling cutter (16-insert)
Tool length	170 mm
Spindle speed	95 min^{-1}
Feedrate	152 mm/min
Depth/width of cut	4 / 15 mm



END MILLING

Workpiece material	Ductile cast iron (FCD450)
Tool used	40 mm dia. end mill
Spindle speed	1,200 min^{-1}
Feedrate	480 mm/min
Depth/width of cut	6 / 50 mm

BORING

Workpiece material	Ductile cast iron (FCD450)
Tool used	190 mm dia. boring
Tool length	465 mm
Spindle speed	167 min^{-1}
Feedrate	67 mm/min
Stock removed	5.0 mm (one side)

DRILLING

Workpiece material	Ductile cast iron (FCD450)
Tool used	75 mm dia. Insert drill
Spindle speed	702 min^{-1}
Feedrate	106 mm/min

Metal removal rate: 468 cm^3/min

TAPPING

Workpiece material	Ductile cast iron (FCD450)
Tool used	M48xP5.0 tap
Spindle speed	30min^{-1}
Feedrate	150 mm/min
Spindle load	54%

HX504 SERIES (40 Taper) Control:(F)FANUC

Technical Data		HX504 A / B			
		E		P	
Work range					
Pallet size (mm)		500 x 500			
Max. work swing diameter (mm)		Ø762			
Max. work piece height		800			
Table load capacity (kg)		500			
Travel X / Y / Z (mm)		762 / 640 / 762			
B minimum indexing (degree)		1 / 0.001			
Table surface to spindle center (mm)		85 ~ 725 (Belt)			
Spindle nose to table center (mm)		110 ~ 872			
Surface configuration		24-M16@ pitch100 mm grid			
Feed drive					
Feed force	X / Y / Z (N)	6,283 / 11,519 / 6,283		8,639 / 8,639 / 8,639	
Rapid movement	X / Y / Z (m/min)	32		48	
	B (sec. /90 degree)	2.5 / 1.5			
Acceleration	X / Y / Z (m/s^2)	3 / 4 / 4		4 / 5 / 5	
Dia. & pitch of the ball screw (mm)		Ø45 / 12		Ø45 / 16	
Accuracy Positioning / Repeatability					
ISO 230-2		0.008 / 0.004			
JIS 6338 (300 mm)		±0.003 / ±0.002			
VDI3441		0.008 / 0.004			
Main spindle					
Spindle taper		BBT40			
Max. spindle speed		9,000	12,000	9,000	12,000
Spindle base speed		1,125	1,500	1,125	1,500
Spindle output kW (S6-40%)		22(1)	22(1)	30	30
Spindle torque Nm (S6-40%)		187(1)	140(1)	255	191
Spindle transmission		Belt			
Spindle bearing diameter (mm)		Ø70			
Tool changer					
Tool selection		Random pocket, bidirectional election			
Magazine positions		60 (std.) / 120 & 240 (opt.)			
Max. tool diameter w/o adjacent tool (mm)		Ø75/Ø150 (60ATC) ; Ø70/Ø150 (120&240ATC)			
Max. tool length (mm)		450			
Max. tool weight (kg)		10			
Max. tool weight moment <from spindle gauge line> (Nm)		20			
Tool to tool time (sec.)		2			
Chip to chip time (sec.)		4.8		4.5	
Pallet changer					
Number of pallet		2			
Method of pallet changer		ARM type			
Pallet change time (sec.)		10.5			
Pallet changing repeatability (mm)		0.01			
Coolant system					
Coolant tank capacity (Liter)		450 L			
- Nozzle coolant pump capacity		60 L / min, 3 bar			
- Through spindle coolant pump capacity		25 L / min, 20 bar			
- Ceiling & wash down pump capacity		75 L / min, 1.5 bar			
Machine size					
Height (mm)		3,030			
Floor space W x D (mm)		3,400 x 5,060 (60 ATC) 3,830 x 5,400 (120 & 240 ATC)			
Weight (kg)		13,000 (60 ATC) 14,200 (120 ATC) 16,000 (240 ATC)			
Connections					
Main power		220 V / 60 Hz or 400 V / 50 Hz			
Power consumption (KVA)		35		40	

Note: (1) S3-25%
(2) S6-25%

HX504 SERIES (40 Taper) / HX505 SERIES (50 Taper)

Technical Data		HX504	HX505	
		A / B	A	
		P	E	P
Work range				
Pallet size (mm)		500 x 500		
Max. work swing diameter (mm)		Ø762	Ø800	
Max. work piece height		800		
Table load capacity (kg)		500		
Travel X / Y / Z (mm)		762 / 640 / 762		
B minimum indexing (degree)		1 / 0.001	1	
Table surface to spindle center (mm)		100 ~ 740 (Coupling)	85 ~ 725	
Spindle nose to table center (mm)		110 ~ 872	115 ~ 877	
Surface configuration		24-M16@ pitch100 mm grid		
Feed drive				
Feed force	X / Y / Z (N)	8,639 / 8,639 / 8,639	11,519 / 11,519 /11,519	
Rapid movement	X / Y / Z (m/min)	48	32	
	B (sec. /90 degree)	2.5 / 1.5	2.5	
Acceleration	X / Y / Z (m/s^2)	4 / 5 / 5	3 / 4 / 4	
Dia. & pitch of the ball screw(mm)		Ø45 / 16	Ø45 / 12	
Accuracy Positioning / Repeatability				
ISO 230-2		0.008 / 0.004		
JIS 6338 (300 mm)		±0.003 / ±0.002		
VDI3441		0.008 / 0.004		
Main spindle				
Spindle taper		BBT40	BBT50	
Max. spindle speed		15,000	6,000	
Spindle base speed		500	625	
Spindle output kW (S6-40%)		30(2)	26(1)	
Spindle torque Nm (S6-40%)		420(2)	397(1)	
Spindle transmission		Coupling	Belt	
Spindle bearing diameter (mm)		Ø70	Ø100	
Tool changer				
Tool selection		Random pocket, bidirectional election		
Magazine positions		60 (std.) / 120 & 240 (opt.)	40 (std.) / 60 & 150 (opt.)	
Max. tool diameter w/o adjacent tool (mm)		Ø75/Ø150 (60ATC) ; Ø70/Ø150 (120&240ATC)	Ø110 / Ø220	
Max. tool length (mm)		450	400	
Max. tool weight (kg)		10	15 (40ATC) 20 (60 & 150ATC)	
Max. tool weight moment <from spindle gauge line> (Nm)		20	30	
Tool to tool time (sec.)		2	2.6	
Chip to chip time (sec.)		4.5	5.4	
Pallet changer				
Number of pallet		2		
Method of pallet changer		ARM type		
Pallet change time (sec.)		10.5		
Pallet changing repeatability (mm)		0.01		
Coolant system				
Coolant tank capacity (Liter)		450 L		
- Nozzle coolant pump capacity		60 L / min, 3 bar		
- Through spindle coolant pump capacity		25 L / min, 20 bar		
- Ceiling & wash down pump capacity		75 L / min, 1.5 bar		
Machine size				
Height (mm)		3,030		
Floor space W x D (mm)		3,400 x 5,060 (60 ATC) 3,830 x 5,400 (120 & 240 ATC)	3,400 x 5,060 (40 & 60 ATC) 4,300 x 6,630 (150 ATC)	
Weight (kg)		13,000 (60 ATC) 14,200 (120 ATC) 16,000 (240 ATC)	13,500 (40 ATC) 14,500 (60 ATC) 17,000 (150 ATC)	
Connections				
Main power		220 V / 60 Hz or 400 V / 50 Hz		
Power consumption (KVA)		45	40	

HX635 SERIES (50 Taper) Control:(F)FANUC

Technical Data	HX635			
	A		B	
	HT	HS	HT	HS
Work range				
Pallet size (mm)	630 x 630			
Max. work swing diameter (mm)	Ø950 (1)			
Max. work piece height	950			
Table load capacity (kg)	900			
Travel X / Y / Z (mm)	1,000 / 800 / 900			
B minimum indexing (degree)	1		0.001	
Table surface to spindle center (mm)	50 ~ 850			
Spindle nose to table center (mm)	150 ~ 1,050			
Surface configuration	24-M16 Tapped holes; pitch: 125			
Feed drive				
Feed force X / Y / Z (N)	11,780 / 14,920 / 11,780		11,780 / 14,920 / 11,780	
Rapid movement X / Y / Z (m/min)	40			
B (sec. /90 degree)	2.5		2	
Acceleration X / Y / Z (m/s^2)	4 / 5 / 5			
Dia. & pitch of the ball screw (mm)	Ø50 x 16			
Accuracy Positioning / Repeatability				
ISO 230-2	0.008 / 0.004			
JIS 6338 (300 mm)	±0.003 / ±0.002			
VDI3441	0.008 / 0.004			
Main spindle				
Spindle taper	BBT50			
Max. spindle speed	6,000	10,000	6,000	10,000
Spindle base speed	375	460	375	460
Spindle output kW (S3-40%)	26	37	26	37
Spindle torque Nm (S3-40%)	662	457	662	457
Spindle transmission	ZF Gear box+Coupling	Coupling	ZF Gear box+Coupling	Coupling
Spindle bearing diameter (mm)	Ø100			
Tool changer				
Tool selection	Random pocket, bidirectional election			
Magazine positions	40 (std.) / 60 & 150 (opt.)			
Max. tool diameter w/o adjacent tool (mm)	Ø120 / Ø230			
Max. tool length (mm)	500			
Max. tool weight (kg)	15 (40ATC) 20 (60 & 150ATC)			
Max. tool weight moment <from spindle gauge line> (Nm)	30 (40ATC) 50 (60 & 150ATC)			
Tool to tool time (sec.)	3.5			
Chip to chip time (sec.)	6.5			
Pallet changer				
Number of pallet	2			
Method of pallet changer	ARM type			
Pallet change time (sec.)	14			
Pallet changing repeatability (mm)	0.01			
Coolant system				
Coolant tank capacity (Liter)	900 L			
- Nozzle coolant pump capacity	60 L / min, 4 bar			
- Through spindle coolant pump capacity	25 L / min, 20 bar			
- Ceiling & wash down pump capacity	100 L / min, 1.5 bar			
Machine size				
Height (mm)	3,006			
Floor space W x D (mm)	4,225 x 6,730 (40 / 60 ATC) 4,905 x 7,220 (150 ATC)			
Weight (kg)	15,500 (40 ATC) 16,500 (60 ATC) 21,000 (150 ATC)			
Connections				
Main power	220 V / 60 Hz or 400 V / 50 Hz			
Power consumption (KVA)	44	48	44	48

HX805 SERIES (50 Taper)

Technical Data		HX805					
		A			B		
		HT		HS	HT		HS
Work range							
Pallet size (mm)		800 x 800					
Max. work swing diameter (mm)		Ø1,200[1]					
Max. work piece height		1,100					
Table load capacity (kg)		1,500					
Travel X / Y / Z (mm)		1,200 / 1,000 / 1,000					
B minimum indexing (degree)		1			0.001		
Table surface to spindle center (mm)		30 ~ 1,030					
Spindle nose to table center (mm)		100 ~ 1,100					
Surface configuration		24-M16 Tapped holes; pitch: 160					
Feed drive							
Feed force	X / Y / Z (N)	11,780 / 14,920 / 11,780					
Rapid movement	X / Y / Z (m/min)	40					
	B (sec. /90 degree)	3			2.1		
Acceleration	X / Y / Z (m/s^2)	4 / 5 / 5					
Dia. & pitch of the ball screw (mm)		Ø50 x 16					
Accuracy Positioning / Repeatability							
ISO 230-2		0.008 / 0.004					
JIS 6338 (300 mm)		±0.003 / ±0.002					
VDI3441		0.008 / 0.004					
Main spindle							
Spindle taper		BBT50					
Max. spindle speed		6,000	7,500 (Opt.)	10,000	6,000	7,500 (Opt.)	10,000
Spindle base speed		312	375	460	312	375	460
Spindle output kW / torque Nm (S3-40%)		26[2] / 993[2]	26[2] / 795[2]	37 / 457[2]	26[2] / 993[2]	26[2] / 795[2]	37 / 457[2]
Spindle transmission		ZF Gear box + Belt		Coupling	ZF Gear box + Belt		Coupling
Spindle bearing diameter (mm)		Ø100					
Tool changer							
Tool selection		Random pocket, bidirectional election					
Magazine positions		60 (std.) / 150 (opt.)					
Max. tool diameter w/o adjacent tool (mm)		Ø120 / Ø230					
Max. tool length (mm)		600					
Max. tool weight (kg)		20					
Max. tool weight moment <from spindle gauge line> (Nm)		50					
Tool to tool time (sec.)		3.5					
Chip to chip time (sec.)		7					
Pallet changer							
Number of pallet		2					
Method of pallet changer		ARM type					
Pallet change time (sec.)		19					
Pallet changing repeatability (mm)		0.01					
Coolant system							
Coolant tank capacity (Liter)		1,200 L					
- Nozzle coolant pump capacity		60 L / min, 4 bar					
- Through spindle coolant pump capacity		25 L / min, 20 bar					
- Ceiling & wash down pump capacity		100 L / min, 1.5 bar					
Machine size							
Height (mm)		3,610					
Floor space W x D (mm)		3,780 x 7,900 (60 ATC) 4,300 x 7,900 (150 ATC)					
Weight (kg)		25,000 (60 ATC) 29,500 (150 ATC)					
Connections							
Main power		220 V / 60 Hz or 400 V / 50 Hz					
Power consumption (KVA)		50		55	50		55

Note: [1] Maximum swing diameter 800 (HX635); 1,000 (HX805), due to tool length measurement option is elected.
[2] S3-25%

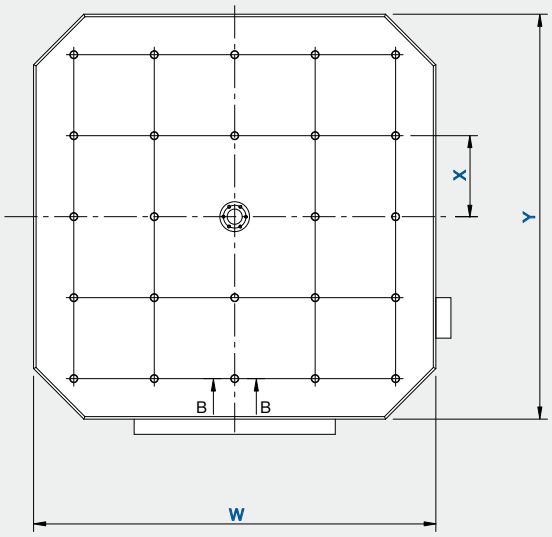
●=Standard ○=Option ×=N/A

Standard / Option accessories	HX504			
	AE	AP	BE	BP
■ QUASER mill i	●	×	●	×
■ FANUC 31i	×	●	×	●
■ Spindle oil chiller	●	●	●	●
■ Coolant through ball screw	●	●	●	●
■ 40 Taper 60 position tool magazine	●	●	●	●
120 position tool magazine	○	○	○	○
240 position tool magazine	○	○	○	○
BT tooling (QUASER SUPPLY)	●	●	●	●
DIN tooling (69872-A)	○	○	○	○
ISO tooling (7388-B)	○	○	○	○
■ 50 Taper 40 position tool magazine	×	×	×	×
60 position tool magazine	×	×	×	×
150 position tool magazine	×	×	×	×
BT tooling (QUASER SUPPLY)	×	×	×	×
DIN tooling (69872-A)	×	×	×	×
ISO tooling (7388-B)	×	×	×	×
■ 2 pallet station	●	●	●	●
■ NC rotary table (0.001˚) with rotary encoder	×	×	○	○
■ Linear encoder	○	○	○	○
■ Tool length / breakage measurement	○	○	○	○
■ Coolant system	●	●	●	●
■ 20 bar through spindle coolant	●	●	●	●
■ 50 bar through spindle coolant	○	○	○	○
■ Ceiling wash down coolant	●	●	●	●
■ Base, wash down coolant	×	×	×	×
■ Coolant wash gun	●	●	●	●
■ Chip augers	●	●	●	●
■ Internal chip conveyor	×	×	×	×
■ External chip conveyor	●	●	●	●
■ Work light	●	●	●	●
■ Machine status light	●	●	●	●
■ CE & EMC	●	●	●	●

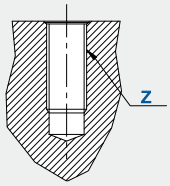
HX505		HX635		HX805	
AE	AP	A	B	A	B
●	×	○	○	×	×
×	●	×	●	×	●
●	●	●	●	●	●
●	●	×	×	×	×
×	×	×	×	×	×
×	×	×	×	×	×
×	×	×	×	×	×
×	×	×	×	×	×
×	×	×	×	×	×
×	×	×	×	×	×
●	●	●	●	×	×
○	○	○	○	●	●
○	○	○	○	○	○
●	●	●	●	●	●
○	○	○	○	○	○
○	○	○	○	○	○
●	●	●	●	●	●
×	×	×	○	×	●
○	○	○	○	●	●
○	○	○	○	○	○
●	●	●	●	●	●
●	●	●	●	●	●
○	○	○	○	○	○
●	●	●	●	●	●
×	×	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
×	×	×	×	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●

Table & Cutting area interfence

Pallet dimension



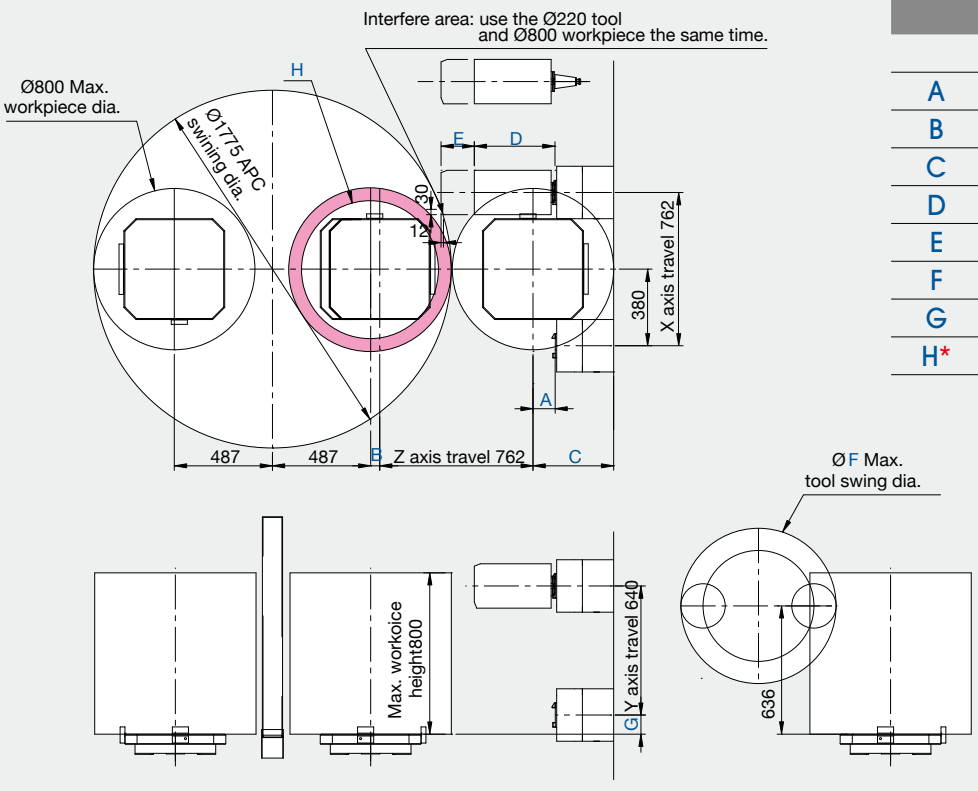
	HX504 / HX505	HX635	HX805
W	500	630	800
X	100	125	160
Y	500	630	800
Z	24-M16	24-M16	24-M16



B-B SECTION

Cutting area interference

HX504 / HX505

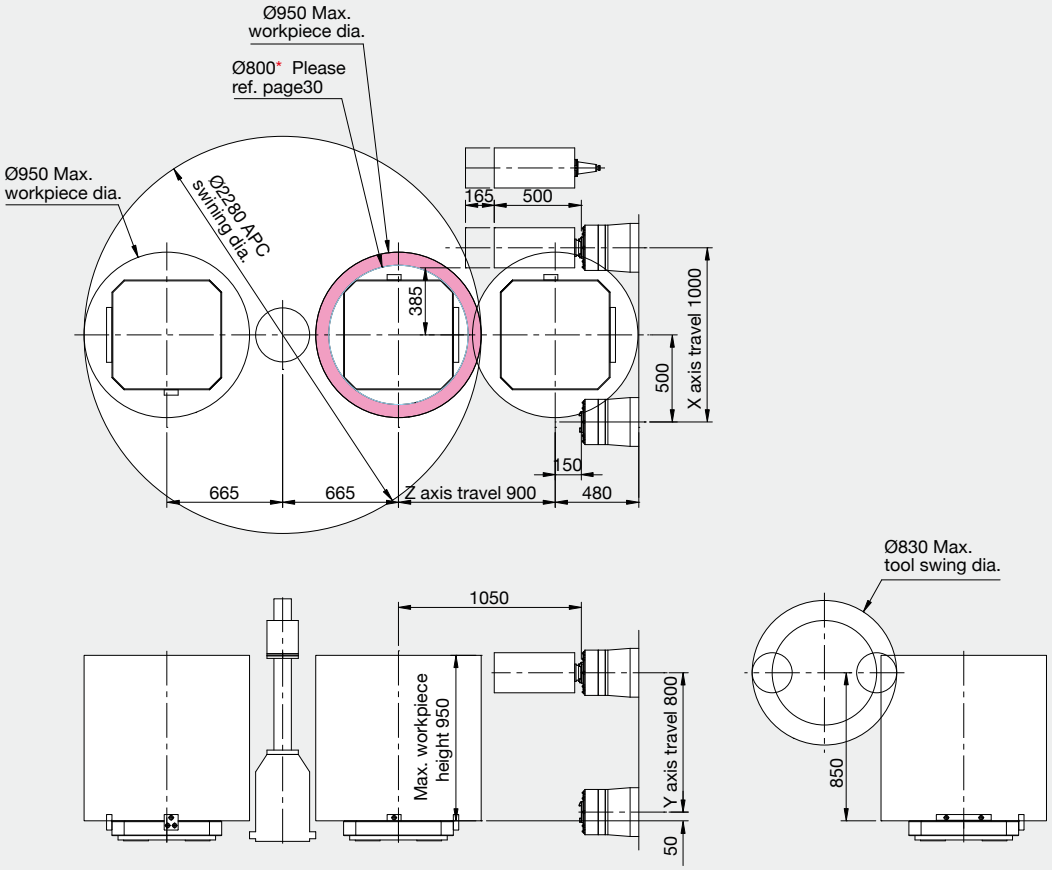


	HX504	HX505
	Belt/Coupling	Belt
A	110	115
B	48	43
C	400	400
D	450	400
E	115	165
F	650	770
G	85/100	85
H*	Ø668	Ø710

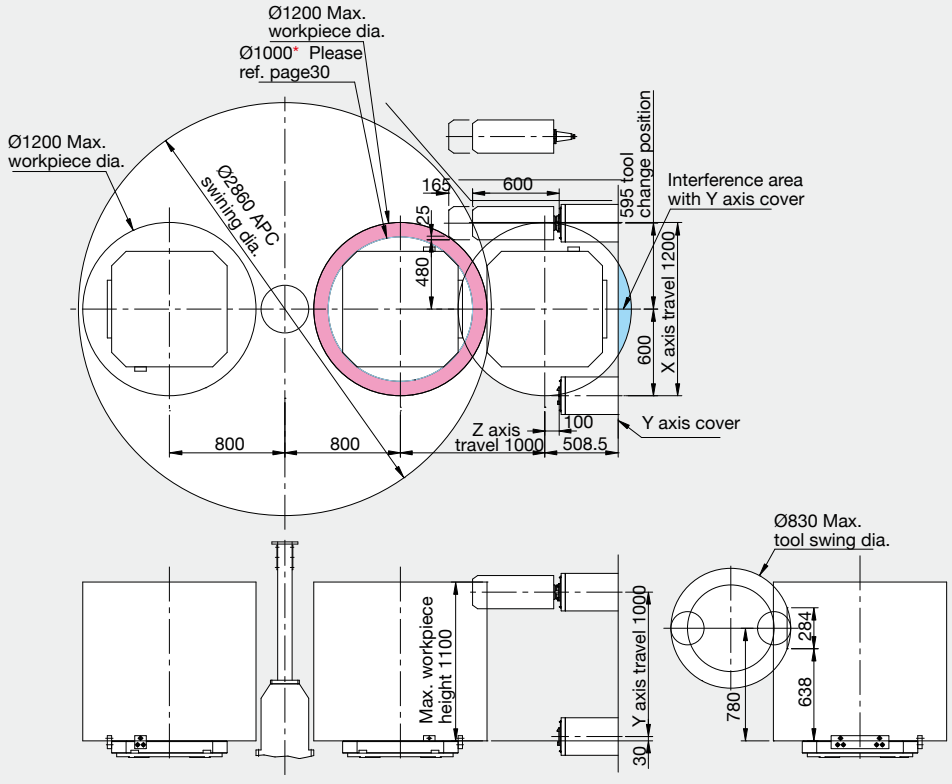
Note: *Maximum swing diameter 668(HX504); 710(HX505), due to tool length measurement option is elected.

Cutting area interference

HX635



HX805



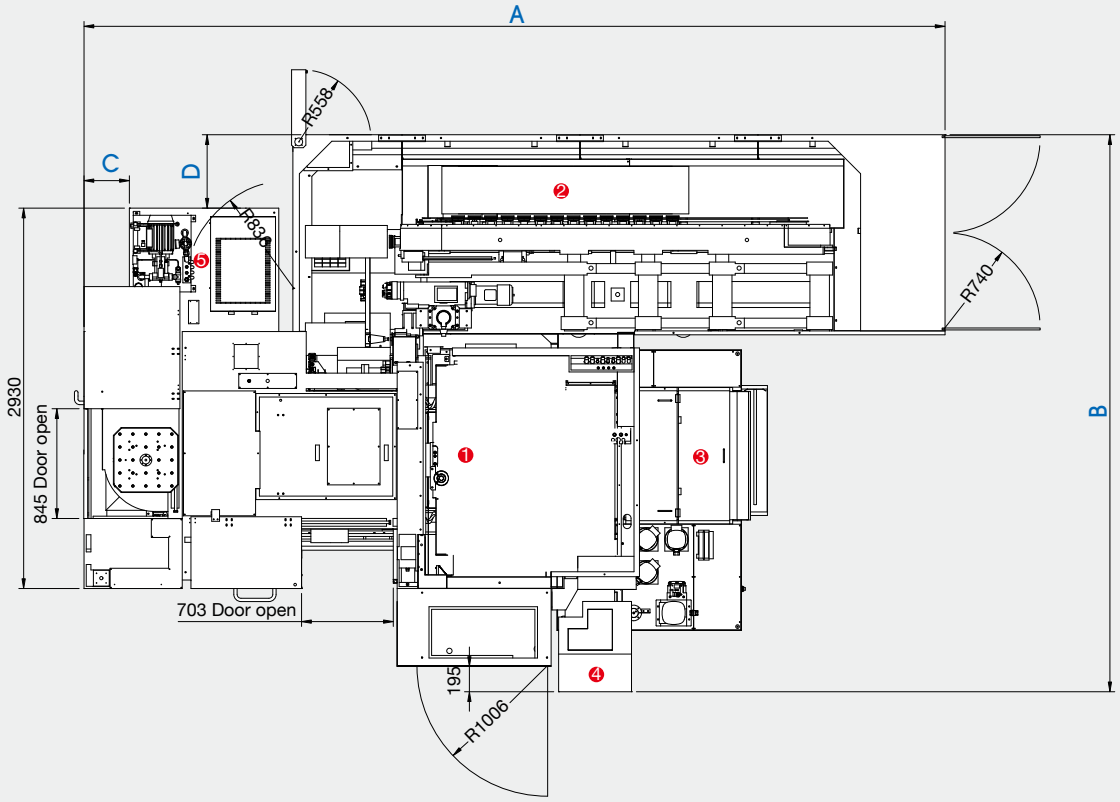
Machine Dimensions

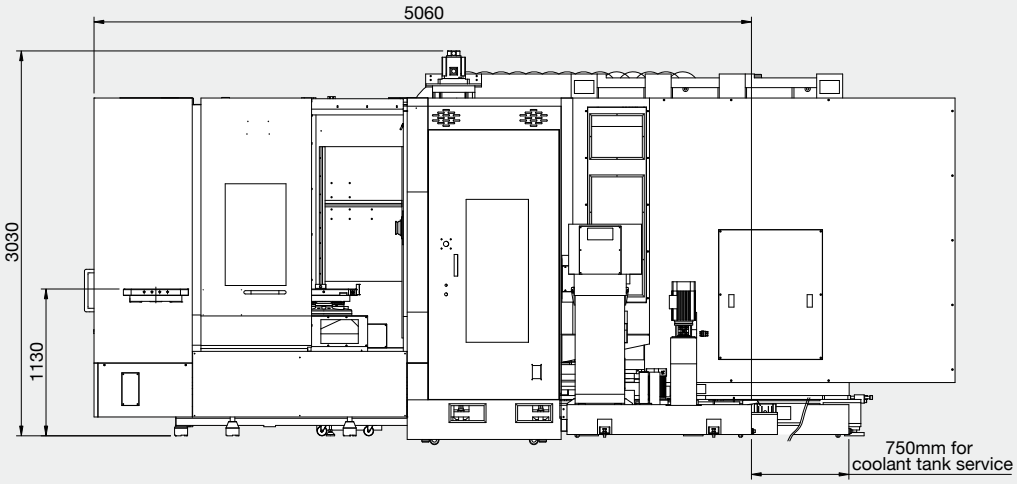
Installation dimension

HX504/HX505

1. Standard Machine
2. Magazine unit
3. Coolant supply unit
4. Chip conveyor
5. Spindle cooling unit & Hyd. tank unit

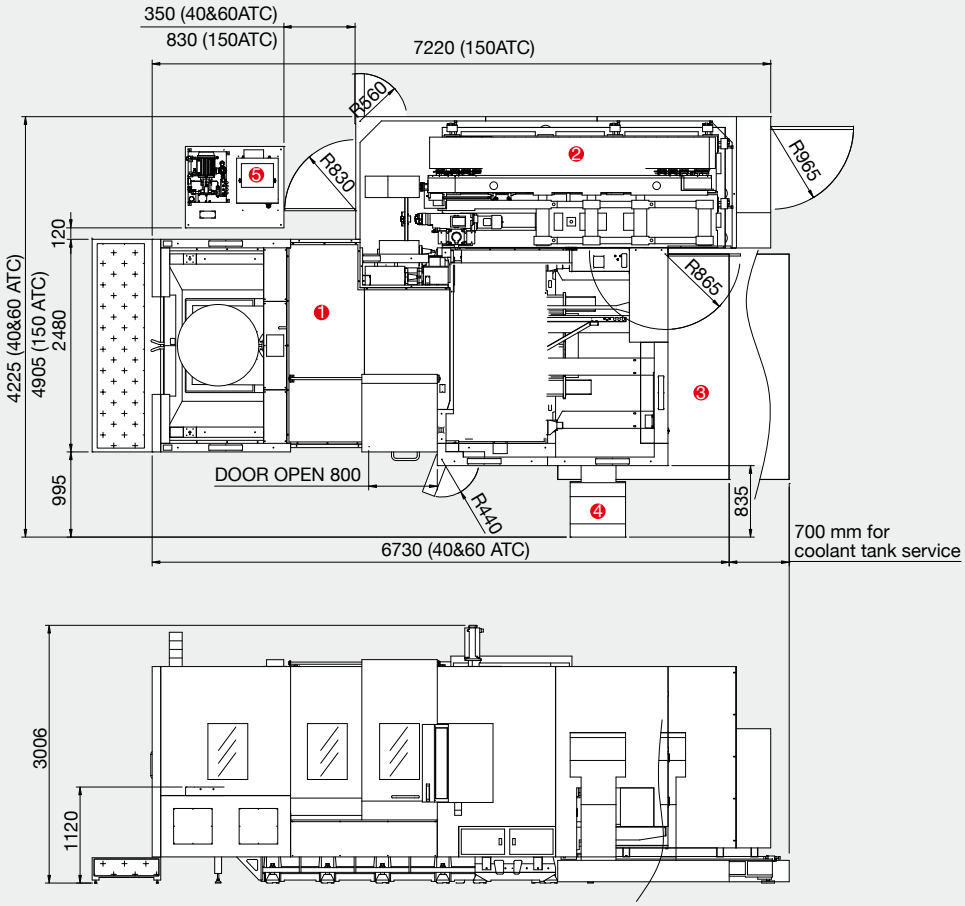
	HX504				HX505			
	A	B	C	D	A	B	C	D
40ATC	-	-	-	-	5060	3400	350	290
60ATC	5060	3400	350	290	5060	3400	350	290
150ATC	-	-	-	-	6630	4300	-	565
120 / 240ATC	5400	3830	-	100	-	-	-	-





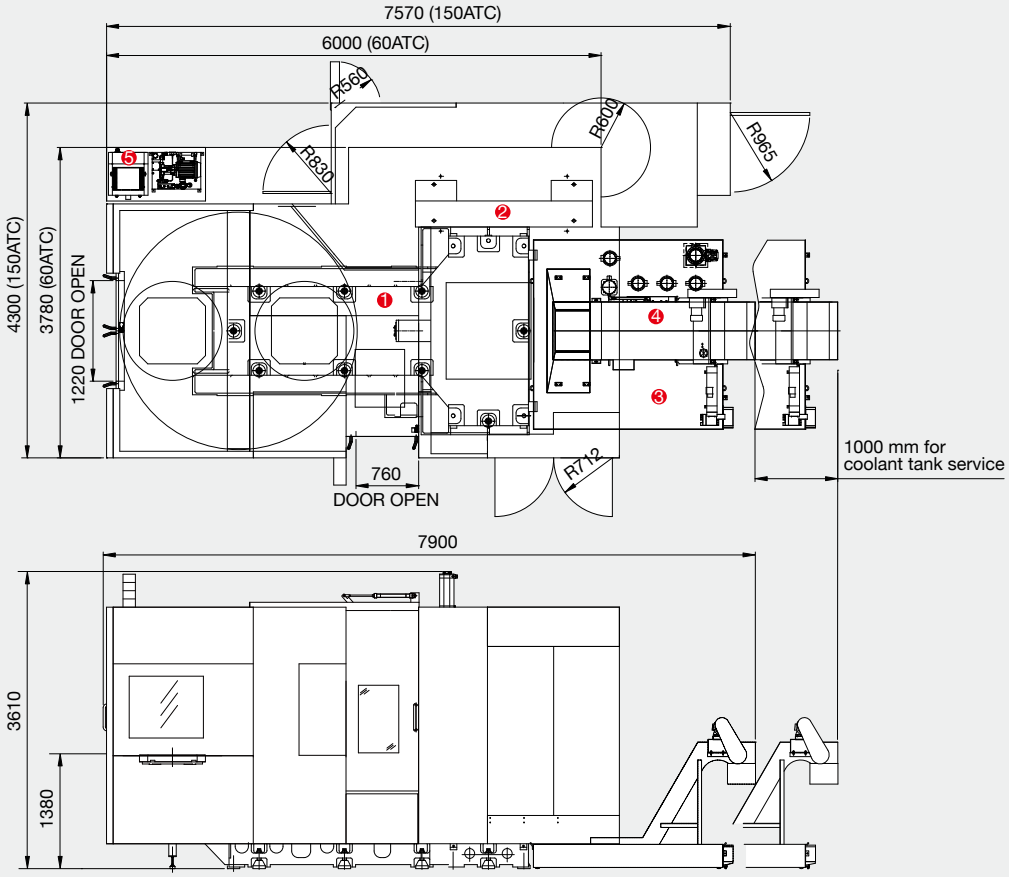
HX635

1. Standard Machine
2. Magazine unit
3. Coolant supply unit
4. Chip conveyor
5. Spindle cooling unit & Hyd. tank unit



HX805

1. Standard Machine
2. Magazine unit
3. Coolant supply unit
4. Chip conveyor
5. Spindle cooling unit & Hyd. tank unit



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